DEEP-SEA AMPHIPODS FROM WEST OF CAPE POINT, SOUTH AFRICA

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(With 6 figures)

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ABSTRACT

Two new species, *Euonyx scutatus* sp. nov. and *Epimeria concordia* sp. nov., are described from this small collection, while of the remaining five species four are recorded for only the second time and are new to southern African waters.

CONTENTS

INTRODUCTION

Although the amphipods of shallower waters around South Africa are relatively well documented, very few records exist from depths exceeding 1 000 m. The first significant series of such samples was that collected by the S.S. *Pieter Faure* between 1879 and 1907, from the vicinity of the Cape of Good Hope, and described by K. H. Barnard (1916, 1925). Since that time only occasional, widely scattered samples of deep-sea amphipods have been reported from the region, notable amongst these being the collections of the *Galathea* expedition (J. L. Barnard 1961) and the R.V. *Vema* cruises (J. L. Barnard 1962*b*).

The present material is derived from twelve samples collected by Dr F. H. Talbot of the South African Museum on board the R.S. *Africana II*, during August and December 1959. An Agassiz trawl of approximately 1 cm mesh was used and the area sampled was adjacent to, but somewhat deeper than, that explored by the S.S. *Pieter Faure*. Due to the large size of mesh used only a few relatively large amphipods were recovered, but these are of considerable interest as they include two species new to science and four others new to the region. All the specimens have been deposited in the South African Museum, Cape Town.

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DESCRIPTION OF MATERIAL

Suborder GAMMARIDEA

Family **Dexaminidae**

Lepechinella (?) *sucia* J. L. Barnard, 1961

Fig. 1

Lepechinella sucia J. L. Barnard, 1961: 99, fig. 69.

Records

SAM–A13653, 33°49′S 16°30′E, 2 700 m, 27 August 1959, 3 males, 8 females.

Remarks

The degree of intraspecific variation amongst members of this exclusively abyssal genus is poorly understood, since many species are known from only a few individuals. The present material shows a close affinity to the unique male of *L. sucia* recorded from the Tasman Sea by J. L. Barnard (1961). The present specimens show more general setation than the Tasmanian individual, but lack its distinct lateral rows of setae on first and second pleonal epimera. The resemblance as regards other significant features, such as shapes of the coxae and pereonal teeth, is, however, so close that separation of the two forms seems unjustified, at least until intraspecific stability of setation patterns is better understood. To facilitate comparison figures of a typical South African male are provided.

Distribution

Tasman Sea, (?) South Africa.

Family **Ischyroceridae**

Bathyphotis tridentata Stephensen, 1944

Fig. 2

Bathyphotis tridentata Stephensen, 1944: 26, figs 17, 18.

Records

SAM A–13656, 34°49′S 16°30′E, 2 700 m, 27 August 1959, a single male.

Remarks

There can be no doubt that the present specimen is synonymous with that described by Stephensen, since there are only minor quantitative differences in the characteristic forms of gnathopod 2, pereiopod 3 and pleon segment 4.

There are, however, some points of difference which are a considerable taxonomic significance. Stephensen noted a paucity of spines on maxilla 1 of his

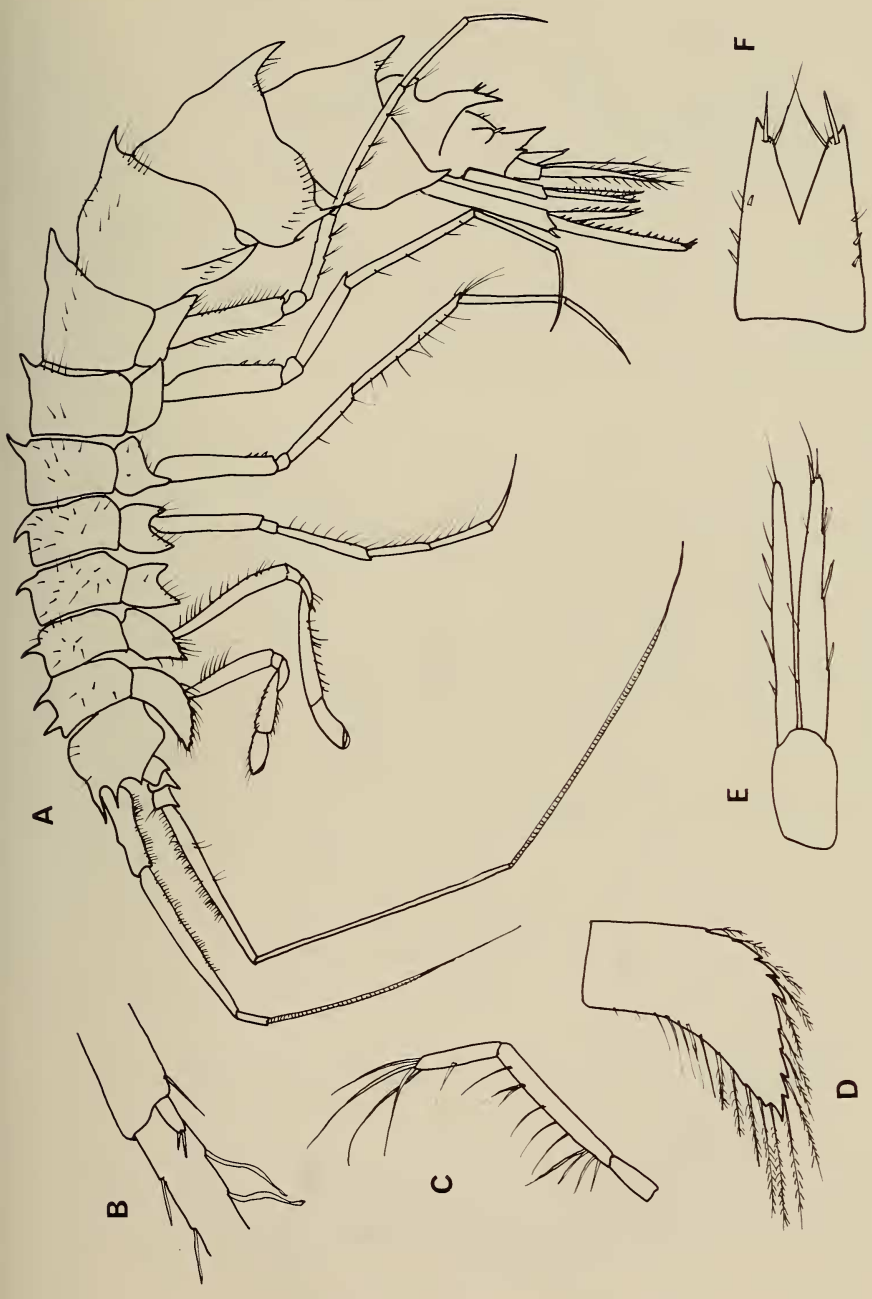

Fig. 1. *Lepechinella* (?) *sucia* J. L. Barnard, 1961.
Male, 13 mm. A. Lateral aspect. B. Accessory flagellum. C. Mandibular palp. D. Coxa 1. E. Uropod 3. F. Telson.

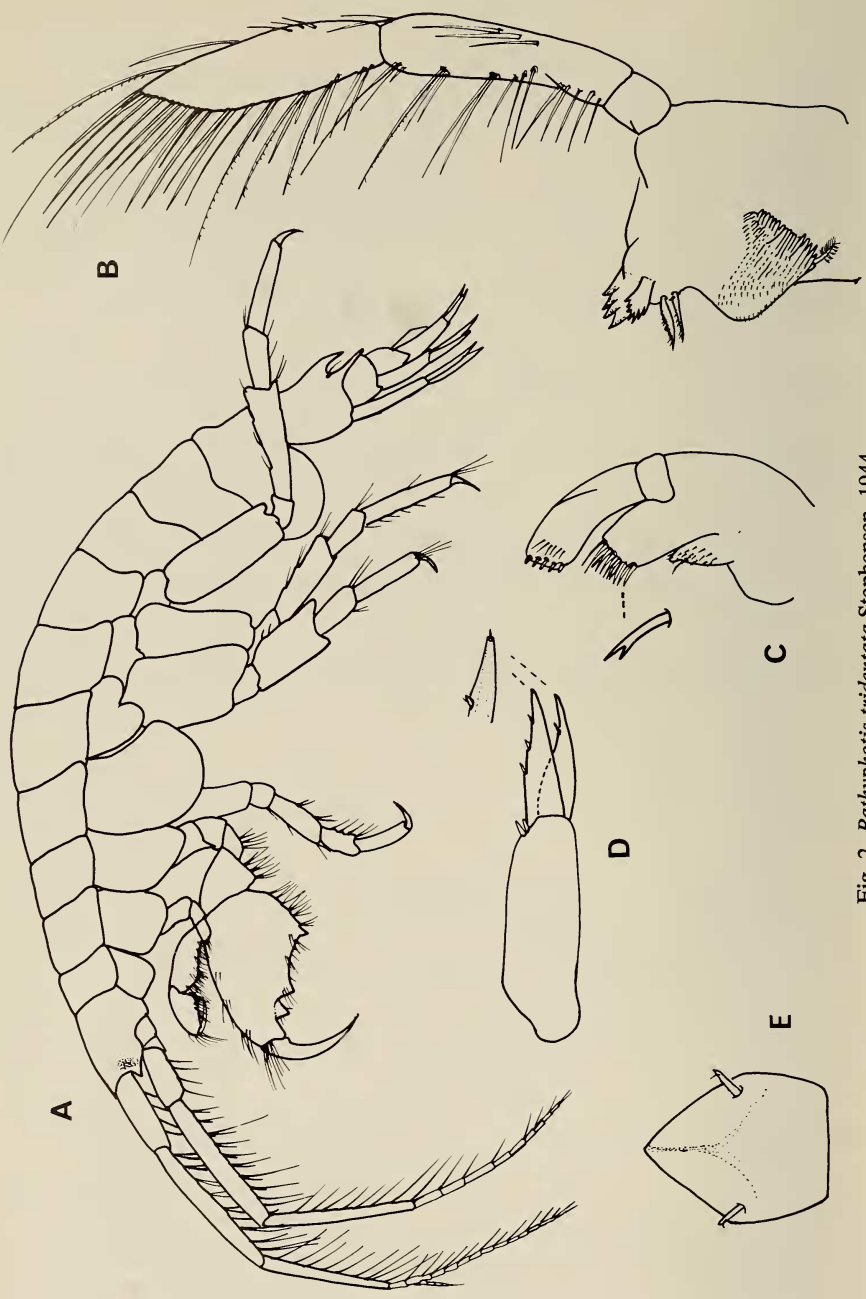

Fig. 2. *Bathyphotis tridentata* Stephensen, 1944.
A. Lateral aspect. B. Mandible. C. Maxilla 1. D. Uropod 3. E. Telson.

specimen (4 on outer plate, 3 on palp), a feature which he considered generically significant. Careful dissection of the present male shows a more usual figure of ten spines on the outer plate and five on the palp (some of the spines shown by Stephensen were broken, indicating that the maxilla may have suffered some damage, hence his low spine count).

Stephensen placed his material close to *Eurystheus* (= *Gammaropsis*), but the species has subsequently been removed to Ischyroceridae (J. L. Barnard 1962*a*) and the structure of uropod 3 has since come to be regarded as '. . . with elongate peduncle, rami short . . . outer ramus hooked apically' (J. L. Barnard 1973). In his original description Stephensen makes no mention of a hooked outer ramus, although such a feature could possibly be inferred from his figure 18. Rather, he described the rami as '. . . narrow, acute, equal in length and breadth'—a description consistent with present observation, although the rami show a minute immersed apical spine when viewed under high-power magnification.

From the above evidence it would appear that the genus *Bathyphotis* is not as discreet, nor as typically 'ischyrocerid', as has come to be supposed, although the excavate coxa 4 remains unique amongst both Corophiidae and Ischyroceridae. The placement of the genus remains open to question and a decision should perhaps await a definitive revision of the entire group. In particular, the importance of shortening of rami of uropod 3 and the significance of this factor relative to uncination of the outer ramus await clarification. An extensive discussion of the utilization of these and other features is given by J. L. Barnard (1962*a*), whose *Eurystheus ventosa*, for example, is closely allied to *Bathyphotis* (especially considering the revised description of maxilla 1 herein). *E. ventosa* has recently been made the type of a new genus *Ventojassa* J. L. Barnard, 1970, and transferred to Ischyroceridae. However, both this genus, *Bathyphotis* and *Microjassa* have third uropods tending to merge with the condition found in Corophiidae.

Family **Lysianassidae**

Eurythenes gryllus (Lichtenstein, 1822)

Eurythenes gryllus: J. L. Barnard, 1961: 35, figs 5–7.

Records

SAM–A13653, 34°42′S 16°54′E, 3 200 m, 8 December 1959, a single female, 30 mm.

Remarks

Closely resembles the female figured by J. L. Barnard (1961). May be distinguished from *E. obesus* by the larger article 2 of pereiopods 3–5 and shorter dactyl of the same limbs.

Distribution

Atlantic and North Pacific.

Euonyx scutatus sp. nov.

Fig. 3

Description (of female, 16 mm)

Head shorter than pereon segment 1, ocular lobes acute, eyes absent; flagellum of antenna 1 of one long and eighteen short articles, accessory flagellum of nine articles; antenna 2 half as long again as 1, flagellum of thirty-seven articles; epistome not projecting anteriorly, only slightly sinuous; mandibular molar a large plate with raised margins, incisor simple, palp 3-articulate; palp of maxilla 1 bi-articulate, outer plate with ten strong serrate spines, inner plate bearing three plumose setae; outer plate of maxilliped excavate medio-distally.

Pereon dorsally carinate, segments 5–7 with progressively more pronounced posterior teeth; coxa 1 triangular, gnathopod 1 chelate, articles 5 and 6 subequal in length; palm of gnathopod 2 straight, transverse; coxa 5 developed into a conical hump, other coxae normal; article 4 of pereiopods 3–5 strongly expanded and distally produced.

Pleon segments 1–3 carinate, bearing postero-dorsal teeth, pleon segment 4 with a conical posterior hump; first pleonal epimeron smoothly rounded, 2 and 3 more quadrate; rami of uropod 1 lanceolate, 2 with outer ramus 80 per cent length of inner; uropod 3 with inner ramus apically truncated, outer ramus lanceolate, slightly the longer; telson 80 per cent cleft.

Holotype

SAM–A13652, female, 16 mm; unique.

Type locality

34°37′S 17°03′E, 2 900 m, 8 December 1959.

Relationships

Although some other species of *Euonyx* (*E. chelatus*, *E. conicurus*) show a dorsal tooth on pleon segment 4, no others have the extensive series of pereonal and pleonal teeth found in *E. scutatus* sp. nov. This species is also distinguished by its triangular coxa 1 and shield-like coxa 5 as well as by details of the structure of gnathopod 2.

Lepidepecreoides nubifer J. L. Barnard, 1971

Fig. 4

Lepidepecreoides nubifer J. L. Barnard, 1971: 41, figs 26–27.

Records

SAM–A10547, 34°36′S 17°00′E, 2 740 m, 10 December 1959.

Remarks

This is only the second record of this species and the first of a female. The specimen closely resembles the smaller male described by J. L. Barnard (1971),

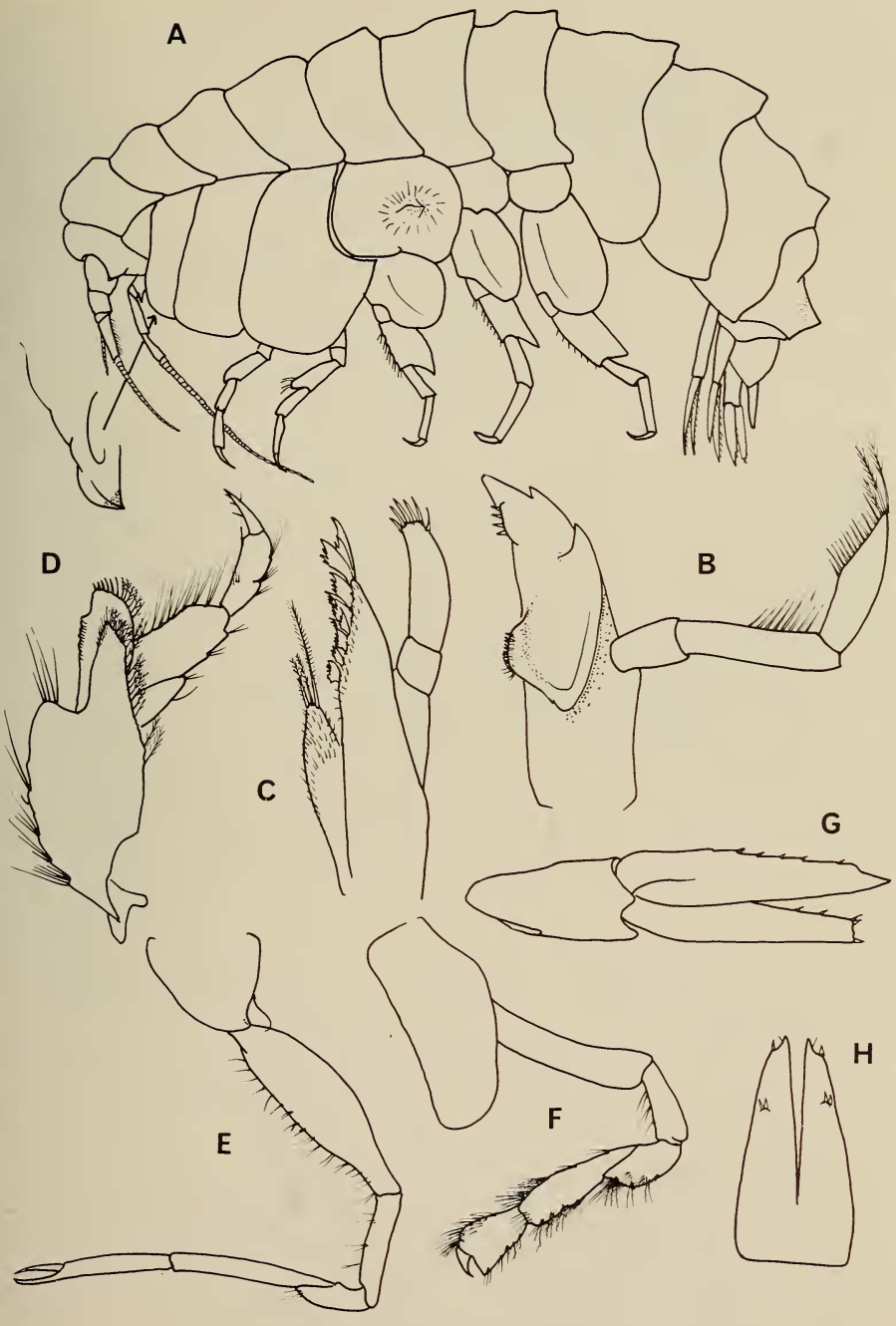

Fig. 3. *Euonyx scutatus* sp. nov.
Female, 16 mm. A. Lateral aspect with epistome enlarged. B. Mandible. C. Maxilla 1. D. Maxilliped. E–F. Gnathopods 1, 2. G. Uropod 3. H. Telson.

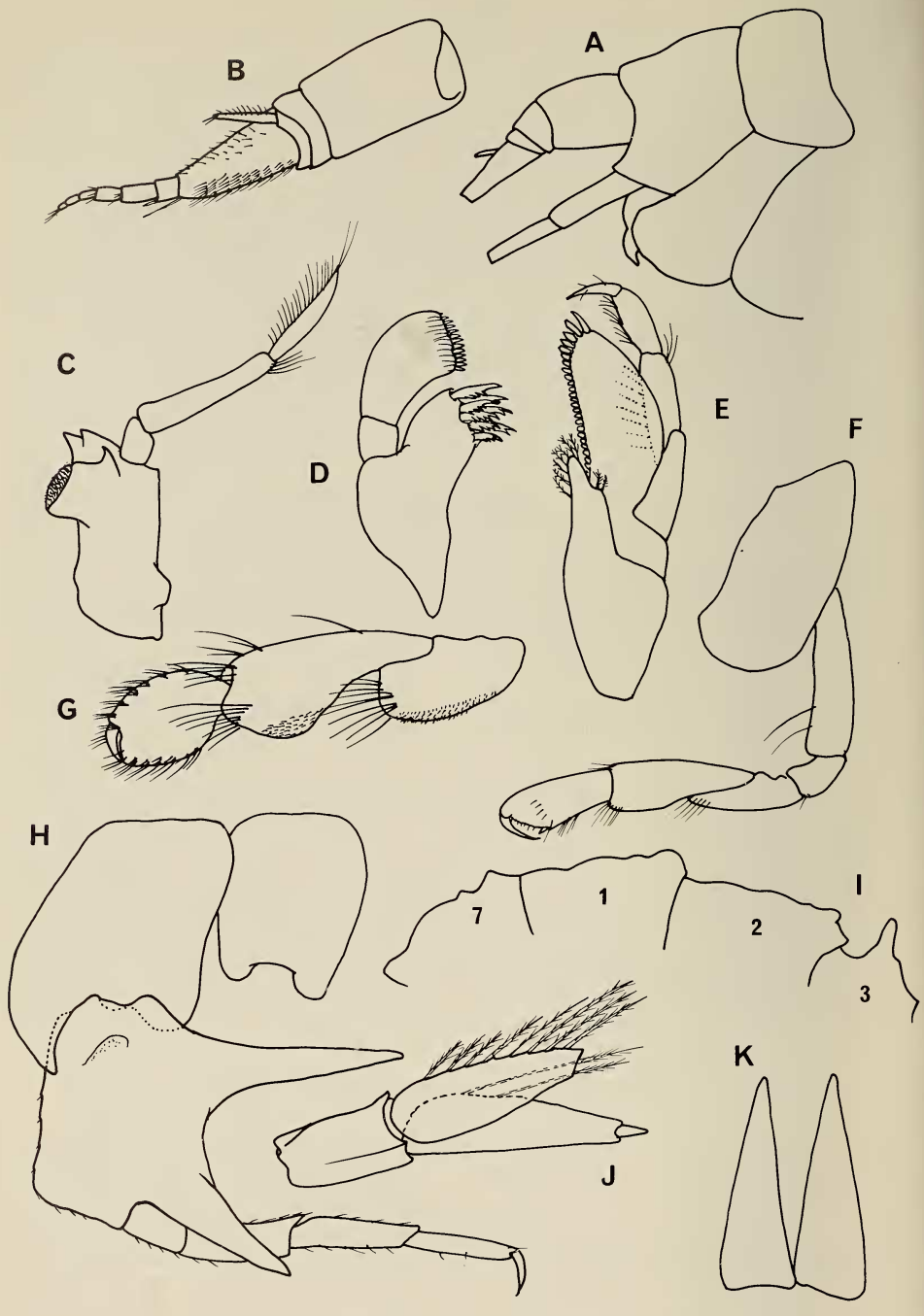

Fig. 4. *Lepidepecreoides nubifer* J. L. Barnard, 1971.
Female, 17 mm. A. Head. B. Antenna 1. C. Mandible. D. Maxilla 1. E. Maxilliped. F–G. Gnathopods 1, 2. H. Pereiopod 3. I. Dorsal profile of pereon segment 7 and pleon. J. Uropod 3. K. Telson.

except for its more tubercular dorsal profile and the longer processes of article 2 of pereiopod 3. Variability of dorsal profile may be a factor of size or sex, but at present cannot be regarded as taxonomically significant. Variations in the lengths of the processes of article 2 of pereiopod 3 are documented for the type species of the genus, *L. xenopus* K. H. Barnard, although in this case the processes were longer in smaller individuals.

Distribution

Oregon 2 860 m, South Africa 2 740 m.

Family **Paramphithoidae**

Epimeria concordia sp. nov.

Fig. 5

Description (of female, 30 mm)

Rostrum elongate, reaching tip of article 3 of antenna 1, head with distinct ocular bulge; pereon segments dorsally smooth, except for small posterior hump on segment 7; article 6 of gnathopod 1 widening slightly, posterior margin with six equally spaced slender spines, palm straight, almost transverse, defined by a single slender spine, dactyl serrate; gnathopod 2 similar to 1 but palm defined by two spines; coxa 4 with long anteroventrally curved cusp and oblique ridge; coxa 5 strongly produced laterally, forming a large triangular 'wing' when viewed from above; coxa 6 with a much smaller lateral process; coxa 7 coniform; article 2 of pereiopod 5 proximally dilated.

Pleon segments 1–3 each with a large upright mediodorsal tooth, segment 4 with a quadrate notch basally and small erect tooth posteriorly; pleonal epimera with accessory tooth on posterior margin, postero-distally acute, second epimeron with an oblique ridge; uropods lanceolate, projecting equally; telson distinctly emarginate apically.

Holotype

SAM–A13651, female, 30 mm, unique.

Type locality

34°36′S 17°00′E, depth 2 740 m, 10 December 1959.

Relationships

This species is remarkable for the enlarged lateral projection of coxa 5, which readily distinguishes it from other species occurring in southern Africa. In other respects it is similar to the closely related group comprising *E. glaucosa* J. L. Barnard, *E. cora* J. L. Barnard, *E. subcarinata* Nagata and *E. pacifica* Gurjanova. None of these forms, however, exhibit the combination of elongate rostrum, large pleonal teeth and accessory teeth on the pleonal epimera, as found in *E. concordia* sp. nov.

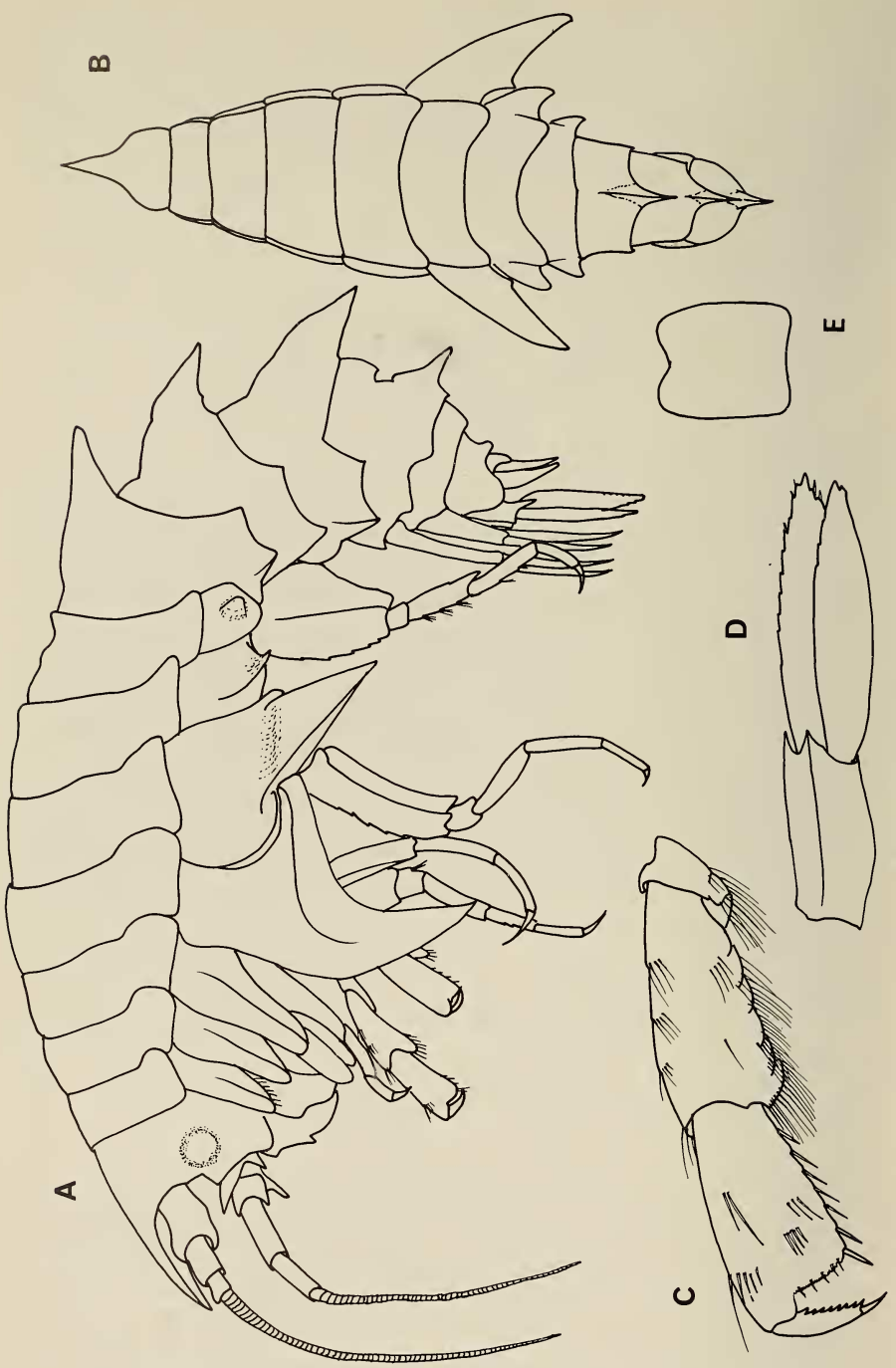

Fig. 5. *Epimeria concordia* sp. nov.
Female, 30 mm. A. Lateral aspect. B. Dorsal aspect. C. Gnathopod 1. D. Uropod 3. E. Telson.

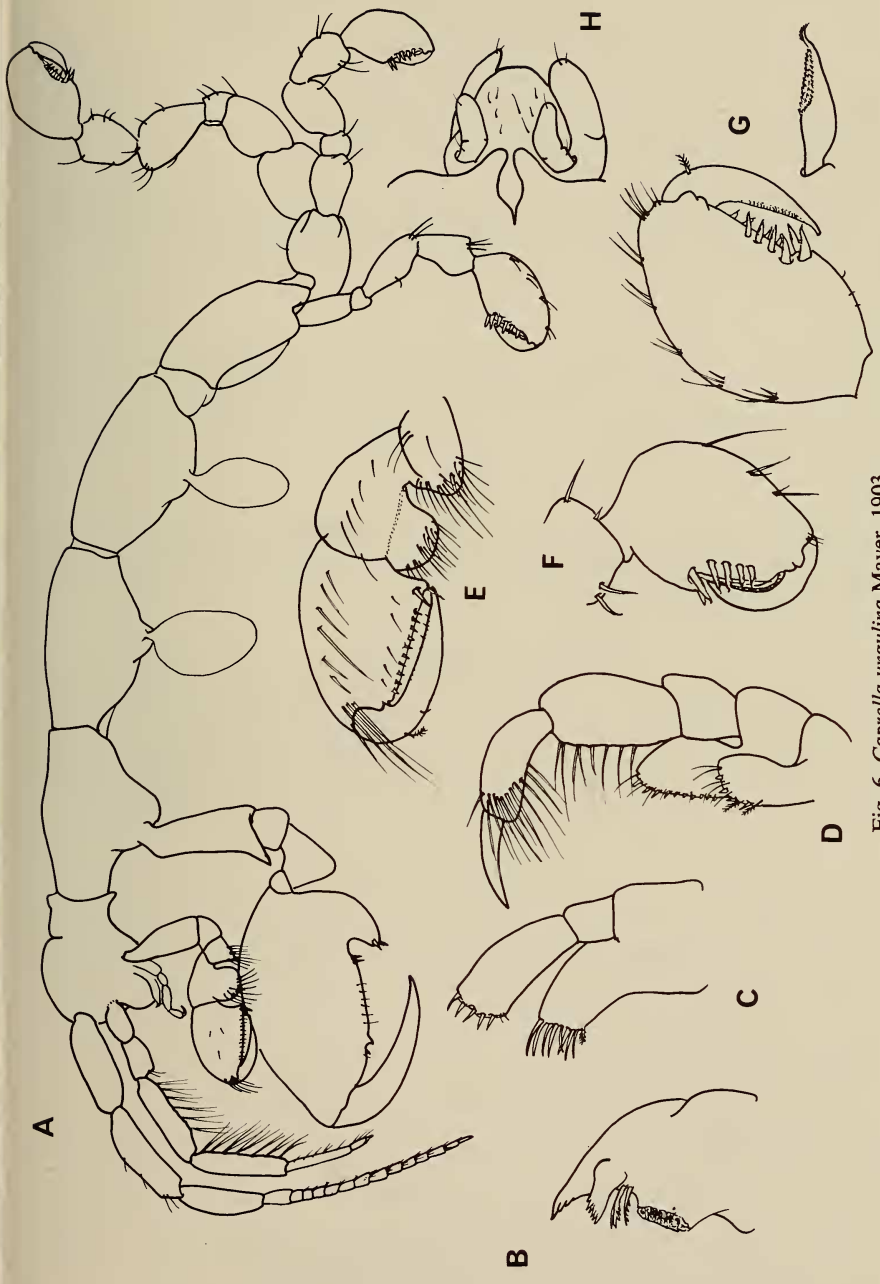

Fig. 6. *Caprella ungulina* Mayer, 1903.
Male, 10 mm. A. Lateral aspect. B. Right mandible. C. Maxilla 1. D. Maxilliped. E. Gnathopod 1. F–G. Articles 6 and 7 of pereiopods 3, 5. H. Abdomen.

Suborder CAPRELLIDEA

Family **Caprellidae**

Caprella ungulina Mayer, 1903

Fig. 6

Caprella ungulina Mayer, 1903: 127, pl. 5 (fig. 36), pl. 8 (figs 30–31).

Records

33°50′S 17°21′E, 1 100 m, 25 August 1959, numerous males and juveniles attached to appendages of the giant stone crab *Neolithoides asperrimus* K. H. Barnard.

Remarks

One of the few caprellids occurring below 1 000 m, readily identified by the strong spines on the palms of pereiopods 5–7. This species has not been recorded since its original description in 1903, hence Mayer's somewhat rudimentary figures are supplemented here.

Distribution

West coast of North and South America; South Africa (Mayer does not state whether his material was found in association with stone crabs, as was the case with the present specimens).

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